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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/577,185	04/25/2006	Naoyuki Toriumi	59017US005	4077

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EXAMINER	
SIMONE, CATHERINE A	
ART UNIT	PAPER NUMBER
1794	

NOTIFICATION DATE	DELIVERY MODE
04/17/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

LegalUSDocketing@mmm.com
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Office Action Summary	Application No.	Applicant(s)	
	10/577,185	TORIUMI ET AL.	
	Examiner	Art Unit	
	Catherine Simone	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 February 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnston et al. (US 2003/0102076 A1) in view of Wang et al. (US 6,358,557 B1).

Johnston et al. teach a polyolefin-base liquid transport film having on the surface thereof a plurality of fine grooves (Figs. 2a-2k and paragraph 0076), wherein a hydrophilic monomer can be grafted to the surface of the fine grooves to form a graft layer (paragraph 0067, lines 1-6 and paragraphs 0073 and 0074), wherein the grafting of the hydrophilic monomer to the surface is patternwise controlled in order to create circuitous liquid transport paths, corresponding with the patternwise control, on the liquid transport film. It is to be noted that the plurality of grooves formed on the surface of the liquid transport film in Johnston et al. form a pattern, so when the hydrophilic monomer is grafted to the surface of the grooves, it would have the pattern already created by the grooves and therefore would be patternwise controlled. Additionally, the grooves in Johnston et al. form channels which could diverge and/or converge along its length and the channel sidewalls could be contoured rather than straight (paragraph 0081). Thus, the pattern formed by the grooves of the liquid transport film in Johnston et al. would be circuitous channels creating circuitous liquid transport paths. Accordingly, the pattern is already created by the

grooves on the surface of the transport film, so the grafting of the hydrophilic monomer to the surface of the grooves would have the pattern which has been created by the grooves and is therefore patternwise controlled.

Johnston et al. fail to teach the hydrophilic monomer being a N,N-dialkylaminoalkyl (meth)acrylamide and/or salt thereof, and specifically being N,N-dimethylaminopropylacrylamide. A person of ordinary skill in the art, upon reading the Johnston et al. reference, would have recognized the desirability of forming a hydrophilic surface on a polymeric substrate (film). Wang et al. teach using hydrophilic monomers such as N,N-dialkylaminoalkyl (meth)acrylamide (N,N-diethylaminoethyl methacrylamide) and N,N-dimethylaminopropylacrylamide (col. 10, lines 1-13) for forming a hydrophilic surface on a polymeric substrate by graft polymerization. Thus, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use the hydrophilic monomers, specifically N,N-dialkylaminoalkyl (meth)acrylamide (N,N-diethylaminoethyl methacrylamide) and N,N-dimethylaminopropylacrylamide of Wang et al. as the hydrophilic monomers in Johnston et al. in order to provide the liquid transport film with a hydrophilic surface and graft layer, as a person with ordinary skill has good reason to pursue the known options within his or her technical grasp. In turn, because the liquid transport film as claimed has the properties and structure predicted by the prior art, it would have been obvious to make the liquid transport film.

Regarding claim 3, Johnston et al. fail to specifically teach the thickness of the graft layer being from 0.01 to 5 μm. It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have modified the thickness of the graft layer in Johnston et al. to be in the range of from 0.01 to 5 μm, since it has been held that where the

general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art in absence of showing unexpected results. *MPEP 2144.05 (II).*

Regarding claim 4, note the polyolefin base in Johnston et al. is polyethylene (paragraph 0060).

Regarding claim 5, note the depth of the groove in Johnston et al. is from 5 to 3,000 μm (paragraph 0084).

Regarding claim 6, note the grooves in Johnston et al. have a first groove and a second groove included in the first groove, the depth of the first groove is from 50 to 3,000 μm, and the depth of the second groove is from 5 to 50% of the depth of the first groove (paragraphs 0084 and 0087).

Response to Arguments

3. Applicant's arguments filed 2/1/2008 have been fully considered but they are not persuasive.

Applicants argue "neither Johnston et al. nor Wang et al. disclose or suggest a patternwise grafting of a hydrophilic monomer onto a substrate. Rather, they teach a more uniform deposition of coatings onto a substrate. Accordingly, Johnston et al. and Wang et al. do not disclose all elements of the present invention as recited in claim 1".

However, it is to be pointed out that Johnston et al. teach a liquid transport film having grooves on its surface, which create a pattern. The hydrophilic monomer is being grafted to the surface of the grooves, which have created a pattern, so the grafting of the hydrophilic monomer

to the surface of the grooves would be patternwise controlled. The grafted hydrophilic monomer on the surface of the grooves would have the pattern already created by the grooves and thus is patternwise controlled. Accordingly, Johnston et al. teach the grafting of the hydrophilic monomer to the surface being patternwise controlled, as recited in claim 1. As a result, Johnston et al. and Wang et al. disclose all elements of the present invention as recited in claim 1.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Catherine Simone whose telephone number is (571) 272-1501. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on (571) 272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Catherine Simone/
Examiner, Art Unit 1794
April 10, 2008

/KEITH D. HENDRICKS/
Supervisory Patent Examiner, Art Unit 1794